DOCUMENT RESUME

ED 224 585 HE 015 648

AUTHOR Thomas, Gail E.; And Others
TITLE Desegregation and Enrollment: Access in Higher Education.
PUB DATE [79]
NOTE 37p.; This paper was identified by a joint project of the Institute on Desegregation at North Carolina Central University and the ERIC Clearinghouse on Higher Education at The George Washington University.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Access to Education; *Black Students; *College Desegregation; College Segregation; Comparative Analysis; Elementary Secondary Education; *Enrollment Trends; Geographic Distribution; Graduate Study; *Higher Education; National Surveys; Private Colleges; Professional Education; *Racial Composition; School Organization; State Colleges; Two Year Colleges; Undergraduate Study; White Students

ABSTRACT

The relationship between college desegregation and minority enrollments across different educational levels and U.S. regions was investigated. The analysis was based on data from the U.S. Department of Education's 1976 survey of racial and ethnic enrollments at all 3,068 U.S. institutions, focusing on two- and four-year, graduate, and professional levels at public and private institutions. It was found that the South was most segregated at the four-year undergraduate, professional, and graduate levels, while the other regions were more segregated at the two-year level. Even though blacks have gained the highest enrollments relative to whites at the undergraduate levels (especially in two-year programs), the undergraduate level is characterized by more racially segregated schools. This trend of higher segregation where blacks have gained most access and lower segregation where blacks have the least enrollment access also occurs when comparing: segregation at public and private institutions at the same level and region, states within regions, and different levels of higher education in all regions outside the South (and in the South when historically black colleges are disregarded). Data are presented on racial distributions and a segregation index (a measure of racial separation of enrollments standardized for the number of available blacks and whites). The organization of higher education, as compared to elementary-secondary education, appears to produce either a low enrollment ratio of blacks or a high degree of racial separation. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED224385

DESEGREGATION AND ENROLLMENT ACCESS IN HIGHER EDUCATION

Gail E. Thomas, Denise C. Dalger, James M. McPartland
Center for Social Organization of Schools, The Johns Hopkins University

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gail E. Thomas

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

HE 015 648

NORTH CAROLINA CENTRAL UNIVERSITY
DURHAM, NORTH CAROLINA 27707

INSTITUTE ON DESEGREGATION

ERIC CLEARINGHOUSE ON HIGHER EDUCATION/INSTITUTE ON DESEGREGATION

COOPERATIVE PROJECT

This paper has been identified by a joint project of The Institute on Desegregation at North Carolina Central University and ERIC Clearinghouse on Higher Education at George Washington University. The purposes of this project are to identify, collect, and make available literature concerned with

(1) the problems of minority students in higher education in general and
(2) the problems of desegregation in historically black colleges and universities in particular.

New published and unpublished materials are reviewed and recommended by participants of the Institute on Desegratation's Interinstitutional Research Group (ID/IRG) for acquisition by ERIC Clearinghouse on Higher Education. An annual bibliography of this material will be published under the names of ERIC and the Institute.

Various types of materials are being solicited, especially unpublished and unindexed materials, as well as publications, produced by faculty and staff members. Included in these may be unpublished faculty studies, institutional research studies, master's theses, monographs, papers presented at professional meetings, articles from general and scholarly periodicals, and conference and workshop proceedings not covered by ERIC Clearinghouse on Higher Education.

To be acceptable for inclusion in the ERIC system, the materials submitted for evaluation must be (1) reproducible, (2) of sufficient substance to be of value to practitioners, researchers, scholars, and others, and (3) not repetitive of materials that are already currently available.

If additional information is needed about this cooperative project or the criteria for selection of materials, please write or call the Director of the Institute on Desegregation at 919/683-6433, North Carolina Central University, Durham, North Carolina 27707.

NORTH CAROLINA CENTRAL UNIVERSITY IS A CONSTITUENT INSTITUTION OF THE UNIVERSITY OF NORTH CAROLINA

DESEGREGATION AND ENROLLMENT ACCESS IN HIGHER EDUCATION

Gail E. Thomas, Denise C. Daiger, James M. McPartland
Center for Social Organization of Schools, The Johns Hopkins University

Until recently, desegregation of American education has been mainly an issue of public policy and research for the elementary and secondary schools of the nation (Coleman et al., 1975; Farley and Taeuber, 1974; Farley, 1975a, 1975b), but not for the colleges and universities. Instead of focusing on issues of higher education desegregation, most attention on minorities in colleges and universities has been concerned with questions of access and equality for college-age populations. These questions have included the relative rates of higher education enrollment, persistence and completion of white and minority populations, and the comparative institutional quality of colleges and universities with large minority enrollments (Astin, 1977; Brown and Stent, 1977; Coleman et al., 1966, Chapter 5; Institute for Studies of Educational Policy, 1976; Willingham, 1970).

Recent court litigation on higher education has concerned policy makers with both the questions of enrollment access in the well-publicized Bakke case and the issue of desegregation in the series of Adams cases (Haynes, 1978). At the same time, research opportunities have been provided to analyze both of these questions with the higher education racial and ethnic enrollment data collected periodically by the federal government from all colleges and universities in this country (U.S. Department of HEW, Office of Civil Rights, 1974, 1976). In particular, these enrollment statistics permit the examination of relationships between desegregation and minority enrollment access across different levels and regions of higher education. Such analyses are useful in considering ways that

desegregation in higher education and elementary-secondary education should be treated differently for research and public policy purposes.

There are at least four factors of school organization and operation that may affect enrollment equity and desegregation to different degrees for elementary-secondary education and at different levels of higher education. These are differences in criteria for student selection and retention, public or private control of schools, geographic areas for student recruitment and enrollment, and the existence of institutions with distinctive historical missions of service. Elementary-secondary schools in this country have a dominant mode of organization on each of these factors--they are required to admit all students at least until a legally mandated age of attendence, most are publicly controlled, their intake of students is from local community areas, and they offer comprehensive programs designed to service a cross-section of students. In contrast, higher education has developed important variations in these factors of organization and operation across different institutions levels and regions of the country.

Measures will be used that allow direct comparisons of educational groups to examine the relationship between desegregation and minority enrollment access across different levels and regions of higher education, and to discuss major differences in the organization of elementary-secondary education and higher education having important implications for research and policy on desegregation.

Measures of Enrollment Access and Segregation

Tables 1 and 2 present measures of differences in the enrollment access of blacks and whites and in the racial separation of enrollment for

separate levels of higher education in major regions of the country and in the nation as a whole. The statistics are calculated from the 1976 survey of racial and ethnic enrollment data from institutions of higher education collected by the U.S. Department of Education from all 3068 institutions in this country. Tabulations are presented for full-time students at four different levels: two-year undergraduate students, four-year undergraduate students, graduate students, and professional students. The four regions represent the geographic divisions defined by the U.S. Census.

Enrollment access is indicated in Table 1 by the percent black and percent white of the full-time students for each region and level, and by the ratio of the number of white-to-black students enrolled full-time. For example, columns 1, 3 and 5 show that among two-year undergraduates in the nation, 13.3 percent are black, 76.4 percent are white, and the white-black enrollment ratio is 5.7 to 1.

Racial separation of school enrollments is indicated by several different measures. Means and distributions of school racial compositions are measured from the perspective of both white and black students. Values in Table 1 of "the percent black in the school attended by the average white student" are calculated by assigning to each white student the percent black in his or her school, and averaging for all white students in a particular region and level of higher education. For example, column 2 of Table 1 shows that the average white two-year undergraduate in the nation attends a school that is 8.9 percent black. In this case, about 9 of every 100 fellow-students encountered by the average white two-year undergraduate will be black. An analogous measure from the perspec-

tive of black students shown in Table 1 is the "percent white in the school attended by the average black student." To accompany these averages, Table 2 presents distributional statistics that indicate the range of experiences of whites and blacks in schools of different racial compositions.

A Segregation Index is also provided in Table 1 which measures the racial separation of enrollments standardized for the number of available blacks and whites enrolled in a particular region and level of higher education. The Segregation Index is based on a comparison of the actual school racial composition of the average student and the expected racial composition if the available black and white students were randomly distributed across the schools. For this index, the actual school racial composition is indicated by the measure of (1) "the percent black in the school attended by the average white student" or (2) "the percent white in the school attended by the average black student." It can be shown that the expected values for these measures if the available blacks and whites were randomly distributed among the schools is equal to (1) the overall percent black enrollment, or (2) the overall percent white enrollment for the particular region and level (Becker, et al., 1978). For example, column 2 of Table 1 shows that the average two-year undergraduate white student in the nation attends a school that is 8.9 percent black, while column 1 shows that under a random distribution of students we would expect the average white to attend a school that is 13.3 percent black. The combination of these two values yields a Segregation Index

of 33.0 in column 6.[1] The analogous measures from the perspective of the black student are shown in columns 4 and 3, the "percent white in the school attended by the average black student," and the "percent white" at each region and level, which yield a similar Segregation Index in column 6. The Segregation Index can assume values between 0 and 100; it will have the value 100 whenever black and white students attend entirely separate schools and zero whenever the actual racial separation of enrollment is the same as a random allocation of the students in the region and level, with larger values between zero and 100 indicating greater racial separation. The Segregation Index has several important properties that are useful for our purposes, including its independence of group size and aggregate racial proportions that permits direct comparisons between educational groups, and its equivalence to the between-group proportion of variance in race that permits decomposition of the index into analytically interesting components (Becker et al., 1978).

Important differences between levels of higher education and between regions of the country are presented in Tables 1 and 2 for enrollment

---

[1] The calculation formula for the Segregation Index has two equivalent forms:

$$S = \frac{\left(\text{Percent White}\right) - \left(\text{Percent white in the school attended by average black student}\right)}{(\text{Percent White})}$$

Or:

$$S = \frac{\left(\text{Percent Black}\right) - \left(\text{Percent black in the school attended by average white student}\right)}{(\text{Percent Black})}$$

The two calculation formulas will give the same value if blacks and whites are the only two groups in the population, and slightly different values if there are other not very large ethnic groups besides blacks and whites in the population. For this paper, an average is presented of the two values calculated by the above formulae. This index was selected because it does not have the bias problems of other familiar segregation indices which can produce misleading comparisons (Cortese et al., 1976). It is critical to the major findings in this paper that values of the selected Segregation Index are not mathematically dependent on the racial proportions of students in a particular locality or level. For proof of this property and other properties of the selected index, see Becker et al., 1978; Coleman et al., 1975; and Zoloth, 1974.

access and segregation.

Comparison of Levels of Higher Education

Opposite trends across levels of higher education are shown in the enrollment access of black students and in the degree of racial separation of enrollment. Blacks have gained much greater proportional enrollment in undergraduate schools (especially in two-year programs) than in graduate or professional schools, but undergraduate schools are much more racially segregated than graduate or professional schools. That is, the levels of higher education where blacks have gained the highest enrollment relative to whites are the levels where the races are most likely to attend separate schools. Conversely, blacks and whites are most likely to be randomly distributed among the schools at those levels of higher education where there are relatively few blacks enrolled.

The trend of increasing white-black enrollment ratios as one moves from two-year undergraduate to four-year undergraduate, and from four-year undergraduate to graduate or professional students is clearly shown in Table 1 within each of the four regions of the country. For example, in the Northeast, there are 7.2 whites for every black two-year undergraduate student, 13.6 whites for every black four-year undergraduate student, 20.1 whites for every black graduate student, and 21.0 whites for every black professional student. For this region and level, the percent black of student enrollment declines from 11.4 in two-year undergraduate programs, to 6.4 in four-year undergraduate programs, to 4.0 and 4.3 in graduate and professional programs.

At the national level, Table 1 also shows that the white-black enrollment ratio increases as one compares two-year to four-year undergraduate

students and undergraduate to graduate or professional students. Whereas there are 5.7 white students for every black in two-year undergraduate programs, the white-to-black enrollment ratio is 9.2 to 1 in four-year undergraduate programs. Whereas the white-black enrollment ratio among two-year students is less than the population ratio of 18 to 24 year olds in each region, the white-black enrollment ratio is significantly greater than the population ratio for the other levels of higher education, and dramatically so for graduate or professional enrollments.[2] The relative enrollment of whites to blacks is three to four times greater among professional students than among two-year undergraduate students, in each of the separate regions and in the nation at large.

On the other hand, the racial separation of available black and white enrollments within regions tends to be least among graduate or professional students, followed by four-year undergraduates, with most racial segregation among two-year undergraduates. For example, the Segregation Indices in the Northeast have values of 4.6 and 4.2 for graduate and professional students, 17.4 for four-year undergraduates, and 39.9 for two-year undergraduates. In each region, the same pattern of greater segregation for two-year than for four-year undergraduates, and for four-year undergraduates than for graduate or professional students is evident, with the major exception of Southern two-year undergraduates.

Table 2 shows the consequences for the overall chances of interracial contact in colleges and universities from the lower relative black enrollment in graduate or professional programs, and the higher segregation of

---

[2] The black-white population ratio in 1975 was 9.3:1 in the Northeast, 10.6:1 in the Midwest, 4.3:1 in the South, and 17.3:1 in the West, and 7.6:1 in the nation as a whole (U.S. Bureau of the Census, 1977, p. 31).

undergraduate programs. This table gives the distribution in each region of black and white students in schools of different racial composition at the four levels of higher education. The distributions in Table 2 show the range of black and white experiences that contribute to the average probabilities of cross-racial encounters summarized in Table 1 with the measures of "percent black in the school attended by the average white student" and of "percent white in the school attended by the average black student."

For black students outside the South, very few of the four-year undergraduates and graduate or professional students attend schools where less than half of the enrollment is white: the percentage of blacks in schools with less than fifty percent white enrollment ranges from 12.8 to 17.6 for four-year undergraduates and from 0 to 5.3 for graduate or professional students. But for black students in non-Southern two-year undergraduate programs, a much more sizeable proportion attend schools where whites are in the minority: the percentage of black two-year undergraduates in schools with less than half white enrollment is 53.1 percent in the Northeast, 58.3 in the Midwest, and 39.7 in the West. In terms of the average black experience, presented in Table 1 by the percent white in the school attended by the average black student, there is an <u>increasing</u> probability of interracial contact in non-Southern regions as one moves from two-year to four-year undergraduate programs and from undergraduate to graduate or professional programs. Thus, outside of the South, blacks have the greatest probability of encountering white fellow students at those upper levels of higher education where the total enrollment of black students is most restricted, while blacks are most likely to experience segregated or racially

isolated environments in two-year undergraduate programs where they have had most overall enrollment access. The South is a separate case in several ways we shall discuss, where the probability of blacks attending schools with predominantly nonwhite enrollments is significant at all levels of higher education, involving between one third and two thirds of the black students in the region.

White students at all levels of higher education are unlikely to attend schools with more than a very small proportional black enrollment, as shown in Table 2, but the source of this situation is not the same at different levels. Table 2 shows in every region that virtually all whites attend schools with less than one-quarter black enrollments, but few whites attend schools with not a single black enrolled. Yet between these extremes, a significant proportion of white students at each level of higher education have only a small chance of encountering blacks among their fellow students. Table 2 also shows in every region that at least 6 out of 10 white students attend schools with five percent or less black enrollment, and at least 4 out of 10 whites attend schools with 2 percent or less black enrollment (with the single exception of Southern two-year undergraduates). In terms of the average white experience, shown in Table 1 by the percent black in the school attended by the average white student, there is a decreasing probability of interracial contact in non-Southern regions as one moves from two-year to four-year undergraduate programs and from undergraduate to graduate or professional programs, which is the reverse of the trend of the average black experiences.

The reason whites in graduate or professional programs outside the South are less likely to encounter black fellow-students is not because

the available whites and blacks are unevenly distributed among the schools. In fact, the pattern of Segregation Indices showed that the racial distributions came closest to a random allocation at these levels. Rather, the source of the greater isolation of whites from contacts with blacks in graduate and professional programs is the overall low black enrollment access at these levels. Thus it will take different emphases at each level of higher education outside of the South to increase the chances of white exposure to black fellow students. The main problem in two-year undergraduate programs is the uneven racial distribution across the schools; the main problem in graduate and professional programs is there are so few black students enrolled at these levels; and the problem in four-year undergraduate programs is a combination of separation of school enrollments and low black enrollment access. Again, the South is a special case for several reasons that result in the highest racial separation of enrollments of all regions at all levels except two-year colleges.

Table 3 is offered to show the percentage distribution of institutions across categories of school racial compositions. This table also gives the percentage distribution of total student enrollment across the categories. A comparison of the institutional percentage and the student percentage for a given region, level, and racial composition category shows whether the particular institutions have comparatively large or small enrollments (i.e. school size is comparatively small when the institutional percentage is larger than the student percentage). Table 3 shows that in the nation there are 1119 two-year undergraduate institutions, 1698 four-year undergraduate institutions, 962 graduate and 453 professional institutions, where the percent of majority white schools is 91.1, 93.2,

92.4 and 97.1 respectively. Comparing the institutional and student percentages for majority white schools and each level and region, two-year undergraduate institutions tend to be larger if they are majority white, professional and graduate institutions tend to be smaller if they are majority white, and there is no consistent pattern across regions for four-year undergraduate institutions.

Comparisons of Public and Private Institutions

Table 4 compares public and private institutions of higher education in terms of segregation and enrollment access for the separate regions and levels.

The general importance of private institutions is one major way that higher education differs from elementary-secondary schools in America. But this difference depends upon the level of higher education under consideration. Less than 10 percent of elementary-secondary students in this country attend private schools. The last column of Table 4 shows that only two-year undergraduates are similar to these rates. Across the nation, only 6.4 percent of two-year undergraduates are in private institutions, while the regional percentages range from a low of 1.7 percent in the West to a high of 13.1 percent in the Northeast. In contrast, in the nation, more than 30 percent of four-year undergraduates, more than 1/3 of graduate students, and more than 1/2 of professional students attend private schools. Each region shows the same trend of greater use of private schooling in graduate and professional than four-year undergraduate programs, with the Northeast as the region with greatest percentage enrollments in private institutions at each of these levels. Thus, two-year colleges are

like elementary-secondary schools in the predominance of public institutions, but the rest of higher education in this country has a significant proportion of its enrollment in private institutions. Segregation of enrollments was seen to be most severe outside of the South in two-year undergraduate programs, and this is primarily an issue for the public institutions which enroll most of the students at this level. At other levels where there is a much higher percent of private institutions, there are some consistent differences between public and private institutions in segregation and white-black enrollment ratios.

In comparing public and private institutions at the three highest levels in each of the four regions, we again see the same pattern of opposite trends for white-black enrollment ratios and segregation of enrollment. With only one exception, in each of the comparisons within regions, where the white-black enrollment ratio is higher, the segregation index is lower. That is, when blacks have gained greater proportional enrollment, the schools are found to be more racially segregated when public and private institutions at the same level and region are compared. This pattern is evident in eleven of the twelve comparisons between public and private institutions for particular regions and levels above two-year undergraduate, with the exception found for professional students in the West, where private institutions have both the larger segregation index and white-black enrollment ratio.

Comparison by Attendance Areas

Another way that higher education differs from elementary-secondary schools that affects analyses of desegregation is according to attendance

areas for school enrollments. Public elementary-secondary schools are organized into separate school districts within states, so that students are usually only eligible to enroll in schools in their own local district and often are assigned to the school within their district that is closest to their residential neighborhood. The situation is different in higher education, especially for four-year undergraduate and graduate or professional programs. The more selective the admissions policies of an institution of higher education, the wider the area for student recruitment is likely to be. Two-year colleges, which often will admit a large fraction of candidates who graduate from high school, tend to service mostly a local commuter population that is drawn from throughout a single city or from a large section of a city (Willingham, 1970; Astin, 1977). Four-year colleges will draw from throughout a state or from other states, especially if they are more selective in their criteria for student admissions. And graduate or professional institutions, which are usually much fewer in number and more selective than undergraduate programs, will often draw from throughout a state and across states, again depending somewhat on their prestige and selectivity.

The Segregation Indices presented earlier in Tables 1 and 4 measured the racial separation of enrollments of the black and white students available throughout an entire region (in the case of regional Segregation Indices) or available throughout the entire nation (in the case of national Segregation Indices). That is, these Segregation Indices are based on comparisons of actual racial enrollments and expected enrollments if all the black and white students in the region (or nation) were randomly distributed

among all the institutions of the region (or nation). Tables 5 and 6 are presented to show the degree of segregation in terms of the availability of black and white students within different state boundaries.

Table 5 gives Segregation Indices for each of the 50 states and the District of Columbia for the four separate levels of higher education we have been studying. The same trends of racial separation found for regional comparisons in Table 1 are evident for states in the regions.

Southern states have the highest enrollment segregation at the four-year undergraduate, graduate and professional levels: the fifteen states with the highest segregation indices for four-year undergraduate enrollments are Southern, and all the states with Segregation Indices above 10 at the graduate or professional level are Southern (11 states at the graduate level and 7 states at the professional level). Among four-year undergraduate programs outside the South, only five states show Segregation Indices greater than 10 (New York, Pennsylvania, Illinois, Missouri, Ohio), while 16 of the 17 Southern states have Segregation Indices greater than 10, and most are greater than 40.

Also similar to earlier regional comparisons, non-Southern states show greater segregation for two-year undergraduates than four-year undergraduates, while the opposite is the case in the South. In every one of the 14 non-Southern states where the Segregation Index for two-year or four-year undergraduates is greater than 10, the Segregation Index is higher for two-year than four-year undergraduate enrollments. In the South, all 18 states have greater segregation of four-year than two-year undergraduates. Of the twelve states with most segregation at the two-year undergraduate levels (Segregation Indices higher than 25), 8 are in the non-South and 4 are in the South.

State analyses also confirm the relationship found earlier between school segregation and white-black enrollment ratios across different sets of institutions. Calculations were made of the rank-order correlation between the state Segregation Indices (shown in Table 5) and the state white-black enrollment ratios (not shown) for the states in each region. Using only states with at least 1000 black students to obtain stable measures, the relationship of segregation and black access is found in both the South and non-South, at both the two-year and four-year undergraduate levels. States with the lowest level of black enrollment relative to whites tend to be the least segregated, and states with the highest relative enrollment access for blacks tend to be most segregated. The rank order correlation between state white-black enrollment ratios and state segregation indices is .80 for Southern four-year undergraduate institutions (among the 17 states enrolling at least 1000 blacks), .71 for Southern two-year undergraduate schools (15 states), .75 for non-Southern four-year undergraduate institutions (19 states), and .85 for non-Southern two-year colleges (16 states). (At the graduate and professional levels, there were not enough states enrolling at least 1000 blacks to permit similar calculations: 1 state at the professional level, and 2 Southern and 5 non-Southern states at the graduate level.)

Table 6 shows how average regional and national Segregation Indices change when narrower boundaries are defined for the enrollment of available black and white students. In each region, a weighted average of the state segregation indices has been calculated to show the level of segregation within states, rather than due to variations in availability of black students across states. This index shows the degree of segregation in the

region when the actual school racial enrollments are compared to the expected enrollments if the available blacks and whites within each state of the region were randomly assigned to the institutions of the state. The regional segregation indices standardized for state presented in Tables 6 are calculated by averaging the segregation indices of Table 5 for the states in the region, weighted by the number of white and black students in each state at the particular level of higher education. Table 6 also gives a national segregation index standardized for region (a weighted average of the regional segregation indices from Table 1), and a national segregation index standardized for state (a weighted average of the state segregation indices from Table 5).

Table 6 shows that the index of segregation ordinarily decreases as comparisons are made within narrower boundaries of enrollment availability, but the initial differences of segregation between levels and regions still exist when we use indices standardized for state. For example, in the Northeast, the regional segregation index for two-year undergraduates of 39.9 transferred from Table 1 is reduced to 35.8 when standardized for state. Still the same pattern of differences across levels and between regions described earlier are found for the standardized segregation indices: outside the South, two-year are more segregated than four-year undergraduates, while undergraduates are more segregated than graduate or professionals, and the South is the most segregated region at each level except two-year undergraduates.

Table 6 also gives additional evidence of the opposite trend of enrollment access and segregation we have found in earlier comparisons, although the evidence is more indirect. First, we note from Table 6 that in every

region except the South the reduction in the segregation after standardization by state is greater for two-year undergraduates than four-year undergraduates, and greater for four-year undergraduates than graduate or professional students. In the Northeast, the difference between unstandardized and standardized segregation indices is 4.1 for two-year undergraduates, 1.4 for four-year undergraduates, 1.9 and 1.1 for graduate and professional students. In the Midwest and West, the trend across levels in the segregation index differences is the same. This pattern of differences suggests that out-of-state enrollments contribute least to segregation in each region at the two-year undergraduate level, and less at the four-year undergraduate level than at the graduate or professional level, since standardization for within-state enrollments reduces two-year more than four-year undergraduate segregation indices and four-year undergraduate more than graduate or profession indices. By this reasoning, we again see an opposite trend of enrollment access and segregation: within each region outside the South, the levels of higher education with the most restricted enrollment access for out-of-state students have the highest degree of segregation.

The Special Case of Traditionally Black Institutions in the South

Throughout these analyses, the South was shown to deviate from many of the patterns noted in other regions, and as the region where the racial separation of enrollments was most severe at all levels except two-year undergraduates. To deal with these differences and to further explore the ways issues of enrollment access and segregation are intertwined, we will examine the role of "traditionally black institutions" in the South

There are 103 institutions in this country that have been identified as Traditionally Black Institutions (TBI) which are still predominantly

black (Turner and Michael, 1978; National Advisory Committee on Black Higher Education and Black Colleges and Universities, 1978). These are institutions "serving or identified with service to Black Americans for at least two decades, with most being fifty to one hundred years old" (Blake, et al. 1974). All but five are in the South, and only 16 are two-year institutions. About sixty percent of these institutions are privately controlled, but the public institutions have a much larger average enrollment size and serve nearly 70 percent of all students in the traditionally black institutions. Until the 1960's, the majority of black college students in the country attended one of the Traditionally Black Institutions. In 1976, these institutions continued to play a major role for blacks in higher education, with more than 18 percent of the total black college and university enrollees in the United States. It is estimated that one-half of the bachelor degrees received by black students in 1974 were awarded by the Traditionally Black Institutions (ISEP, 1976).

Table 7 has been constructed to demonstrate the consequence of traditionally black institutions for black enrollment access to higher education and for segregation of enrollments in the South. This table shows at each level of higher education in the region how enrollment access and segregation would change if certain sets of traditionally black institutions were removed without servicing the black students involved in other existing institutions. The table presents Segregation Indices and black enrollment figures for all Southern institutions, and for all remaining Southern institutions if private TBI were removed, if public TBI were removed, and if all TBI were removed. Because there are many fewer TBI among two-year colleges in the South than among four-year undergraduate and graduate or

professional programs, the results in Table 7 are much more dramatic at these upper levels of higher education.

Table 7 shows that the segregation index among four-year undergraduates would be reduced be removing private TBI's from 59.4 to 50.2 at the expense of eliminating 22.1 percent of the black enrollment, by removing public TBI's from 59.4 to 39.6 with the elimination of 39.8 percent of the black enrollment, and by removing both private and public TBI's from 59.4 to 9.6 with the elimination of 61.9 percent of black enrollment. The changes at the graduate and professional levels are also striking. By removing all public and private TBI's the segregation index in the South among graduate students would change from 33.1 to 5.1 at the cost of 36 percent of the black enrollment, and among professional students the segregation index would change from 40.2 to 2.2 with the loss of about half of the black enrollment.

It is interesting to note from Table 7 that the pattern of differences in segregation and enrollment access are the same in the South as noted in other regions when only the institutions which are not TBI's are considered. The last column of Table 7 shows the decreasing trend of segregation indices as one moves from two-year undergraduates (15.2) to four-year undergraduates (9.6) to graduate and professional students (5.1 and 2.2) with the increasing trend in white-black enrollment ratios noted earlier enhanced by the loss of black enrollments in this case.

Of course, these comparisons are at least partially artificial, since many black students in TBI's are there by choice and would find places in other institutions if TBI's were actually closed down. But the results of Table 7 do serve to dramatize how enrollment access and desegregation

can be intertwined. If enrollment access is limited for blacks at one level more than another, or is limited for blacks at some schools more than others at the same level, either desegregation (across levels or across schools within level) or the total black enrollment must suffer.

Analyses of Enrollment Access and Desegregation

We have noted that higher education is organized differently in several important ways from elementary-secondary education that has implications for desegregation research and policy. Higher education, especially above the two-year college level, has a greater variety of public and private institutions, of criteria for student selection and geographic recruitment, and of programs to respond to specialized perspectives and objectives. We have shown that these differences are part of a complex process in the operation of American colleges and universities that tends to produce either a low enrollment ratio of blacks or a high degree of racial separation of black and white enrollments in a given region and level of higher education.

The result has been consistent from several different points of comparison: in higher education, segregation of enrollments is less severe where the black enrollment access is low relative to whites. We have noted this trend of higher segregation where blacks have gained most access, and lower segregation where blacks have least enrollment access, in the following comparisons: across levels of higher education in all regions outside the South (and in the South when TBI's are disregarded), in differences between public and private institutions for given regions and levels of higher education, in comparisons of states within regions, in differences across levels when comparisons of out-of-state student access were estimated for regions outside the South, and in comparisons for

Southern institutions at each level under different assumptions about the fate of minority students without the traditionally black institutions. This result makes clear the need to examine both enrollment access and desegregation in research and policy on equity in higher education, but it also raises important questions for further study.

Processes have been in existence in postsecondary education in this country that have resulted in more segregation where blacks have gained most enrollment access and less segregation where blacks have least enrollment access. Thus, there is the danger of measuring progress on desegregation without attention to enrollment equity in higher education, or of assessing improvements in black enrollment access without considering desegregation, because advances on one goal may be at the expense of the other. More generally, equity of attainments involves not only minority enrollment access but also rates of persistence and completion at college, each of which may be linked to processes also affecting desegregation of higher education. Recent federal policy has begun to recognize that desegregation and enrollment access can be simultaneously affected by processes in higher education, and the Department of Health, Education, and Welfare has established regulations to consider both issues at the same time in those state systems of higher education under court scrutiny (Haynes, 1978; Loyd, 1978). Yet, we do not have a good understanding of the underlying processes that create links between desegregation and enrollment access in higher education.

Further research is needed to adequately explain why segregation of enrollments is less severe at levels and localities where black enrollment access is lower relative to whites. To what extent are the negative relationships between desegregation and enrollment equity explained by structural features of higher education organization (such as admissions poli-

cies and financial requirements of public and private institutions at each level), by demographic features (such as the racial composition of particular community college attendance areas), or by social-psychological features (such as white reluctance to be in a racial minority, black preferences for programs with an ethnic perspective, and community stereotypes of minority and white institutions)? For example, are the demographic explanations for segregation cited at the elementary-secondary level most applicable to two-year colleges, because two-year colleges are more similar than other levels of higher education to elementary-secondary schools (public institutions serving local communities with low restrictions on student admissions)? Do restrictive admissions policies that historically contributed to the creation of black colleges and universities still constitute the major segregating force among four-year undergraduate enrollments? Better information on these questions will require richer data for research than is now available, but is needed to more clearly analyze and assess the goals and progress of higher education systems in this country.

Table 1

Black-White Enrollment Ratios and Segregation Indices for Full-Time Students in Higher Education, By Region and Level, 1976

Region[1] and Level	Percent Black	Percent Black in the school attended by the average White student	Percent White	Percent White in the school attended by the average Black student	Ratio White-Black Enrollment	Segregation Index
Nation						
Two-Year Undergrad.	13.3	8.9	76.4	51.2	5.7:1	33.0
Four-Year Undergrad.	9.1	5.5	84.4	50.7	9.2:1	40.4
Graduate Students	5.1	4.3	79.5	66.2	15.5:1	17.2
Professional Students	4.5	3.7	90.0	73.0	19.7:1	19.4
Northeast						
Two-Year Undergrad.	11.4	6.9	82.0	49.6	7.2:1	39.9
Four-Year Undergrad.	6.4	5.3	87.9	72.4	13.6:1	17.4
Graduate Students	4.0	3.8	80.8	77.4	20.1:1	4.6
Professional Students	4.3	4.2	91.5	88.0	21.0:1	4.2
Midwest						
Two-Year Undergrad.	13.4	6.8	83.1	41.6	6.2:1	50.0
Four-Year Undergrad.	6.6	5.6	89.9	75.6	13 5:1	15.5
Graduate Students	5.0	4.7	80.4	75.7	16.0:1	5.9
Professional Students	3.7	3.6	91 4	87.8	24 1:1	3.4
South						
Two-Year Undergrad.	19.5	15.5	71.4	56.6	3.6:1	20.8
Four-Year Undergrad.	16.5	6.7	78.4	31.9	4.8:1	59.4
Graduate Students	7.9	5.3	79.1	52.8	9.9:1	33.1
Professional Students	6.4	3.9	90.1	54.1	14.0:1	40.2
West						
Two-Year Undergrad.	8.5	6.0	72.7	51.2	8.6:1	30.1
Four-Year Undergrad.	3.7	3.3	81.2	72.8	21.8:1	10.6
Graduate Students	2.9	2.8	77.5	74.5	26.6:1	5.4
Professional Students	2.9	2.8	84.9	78.4	28.4:1	7.2

[1] Northeast (NE) = CT, ME, MA, NH, NJ, NY, PA, RI, VT
Midwest (MW) = IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI
South (S) = AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA. W
West (W) = AK, AZ, CA, CO, HI, ID, MT, NM, OR, UT, WA, WY

Table 2

Percentage Distributions of Full-Time Black and White Students in Higher Education Institutions With Different Racial Compositions, By Region and Level, 1976

ion and Level	Percent of Black Students Attending School Where Enrollment Composition is:			Number of Black Students	Percent of White Students Attending School Where Enrollment Composition is:					Number of White Students
	0-9% White	0-24% White	0-49% White		0% Black	0-2% Black	0-5% Black	0-9% Black	0-24% Black	
ion										
o-Year Undergrad.	14.0	26.9	43.8	210,427	14.4	37.2	53.3	70.0	94.3	1,204,105
ur-Year Undergrad.	35.5	38.8	42.5	394,719	12.8	40.2	68.1	86.6	98.8	3,627,184
aduate Students	12.8	14.8	18.4	22,084	10.9	47.2	81.4	92.2	99.6	341,971
ofessional Students	8.5	18.4	20.6	10,029	19.5	51.1	80.0	97.8	99.8	198,015
theast										
o-Year Undergrad.	2.5	30.2	53.1	36,172	15.2	46.7	65.0	81.9	95.8	260,155
ur-Year Undergrad.	4.3	6.8	17.6	66.764	13.2	40.9	69.8	88.3	98.8	906,349
aduate Students	0.0	0.0	4.3	4,134	10.4	51.3	86.1	97.0	99.7	83,201
ofessional Students	0.0	0.0	0.7	2,195	14.0	43.6	74.0	94.9	100.0	46,035
west										
o-Year Undergrad.	30.8	41.6	58.3	45,470	25.4	49.4	63.9	80.1	97.0	280.003
ur-Year Undergrad.	4.6	10.2	12.8	80,555	15.4	40.9	64.3	87.4	98.0	1,085.973
aduate Students	0.0	0.0	5.3	5,923	6.3	51.3	76.0	90.8	99.4	94,601
ofessional Students	0.1	0.5	0.5	2,648	20.6	43.6	77.0	98.5	100.0	63,881
th										
o-Year Undergrad.	11.8	18.1	34.4	89,343	1.7	8.2	20.1	41.3	84.6	326,327
ur-Year Undergrad.	60.7	63.7	64.4	220,388	3.4	29.4	61.5	79.9	99.3	1,046,936
aduate Students	30.3	35.0	38.1	9,322	7.8	42.6	74.1	85.8	99.3	92,488
ofessional Students	20.6	44.6	49.5	4,108	13.4	49.9	85.9	98.8	99.2	57,488
st										
o-Year Undergrad.	10.5	26.9	39.7	39,422	16.7	47.8	[illegible]	80.2	97.1	37.620
ur-Year Undergrad.	0.0	0.5	13.1	27,012	23.9	60.2	84.5	94.7	99.7	37.924
aduate Students	0.0	0.1	0.5	2,696	21.7	64.4	[illegible]	96.8	100.0	[illegible]
ofessional Students	0.0	0.0	0.0	1,078	37.0	65.8	84.2	99.0	100.0	[illegible]

Table 3

Percentage Distribution of Institutions (I) and Students (S) By School Racial Composition, For Regions and Levels, 1976

Region and Level		Institution Where Full-Time Enrollment is: 0-9% White	0-24% White	0-40% White	50-100% White	Total Number of Institutions (I) or Students (S)
Nation						
Two-Yr. Undergrad.	I	3.0	5.1	8.9	91.1	1,119
	S	4.4	8.2	14.9	85.1	1,601,587
Four-Yr. Undergrad.	I	4.4	5.8	6.8	93.2	1,698
	S	4.6	5.5	6.9	93.1	4,347,150
Graduate	I	3.6	4.5	7.6	92.4	962
	S	1.3	1.5	2.5	97.5	431,189
Professional	I	0.9	1.8	2.9	97.1	453
	S	1.3	1.9	2.3	97.7	221,405
Northeast						
Two-Yr. Undergrad.	I	0.9	4.0	7.0	93.0	227
	S	1.0	6.7	12.3	87.7	316,905
Four-Yr. Undergrad.	I	0.4	0.6	1.2	98.8	490
	S	0.3	0.5	2.7	97.3	1,030,559
Graduate	I	1.9	1.9	4.1	95.9	270
	S	0.1	0.1	0.7	99.3	102,865
Professional	I	0.0	0.0	1.6	98.5	129
	S	0.0	0.0	0.1	99.9	50,283
Midwest						
Two-Yr. Undergrad.	I	2.4	3.1	4.8	95.2	291
	S	4.9	6.6	10.3	89.6	336,934
Four-Yr. Undergrad.	I	0.9	1.5	2.4	97.6	456
	S	0.4	0.9	1.3	98.7	1,207,871
Graduate	I	1.3	1.3	5.2	94.8	229
	S	0.0	0.0	1.4	98.6	117,535
Professional	I	0.8	1.5	1.5	98.5	130
	S	0.6	0.6	0.6	99.4	69,851
South						
Two-Yr. Undergrad.	I	5.0	6.8	11.7	88.3	383
	S	3.5	5.3	17.4	82.6	456,558
Four-Yr. Undergrad.	I	12.8	15.8	17.0	83.0	524
	S	10.6	11.6	12.4	87.6	1,335,015
Graduate	I	7.8	9.5	13.4	86.6	284
	S	3.4	4.1	5.1	94.9	116,805
Professional	I	2.6	5.2	7.0	93.0	115
	S	1.7	3.9	4.4	95.6	63,800
West						
Two-Yr. Undergrad.	I	2.8	6.0	11.5	88.5	218
	S	2.2	8.0	12.5	87.5	463,923
Four-Yr. Undergrad.	I	0.4	2.6	4.4	95.6	228
	S	0.0	2.6	5.5	94.4	723,758
Graduate	I	2.8	4.5	6.7	93.3	179
	S	0.1	0.4	1.0	99.0	92,482
Professional	I	0.0	0.0	1.2	98.7	79
	S	0.0	0.0	1.2	98.7	36,055

Table 4

Segregation Indices and White-Black Enrollment Ratios for Public and Private Institutions of Higher Education, by Region and Level, 1976

	Public Institutions			Private Institutions		
	Seg. Index	Wh.-Bl. Enroll. Ratio	% of Total in Pub. Inst.	Seg. Index	Wh.-Bl. Enroll. Ratio	% of Total in Pri. Inst.
Nation						
Two-Yr. Undergrad.	32.0	5.8:1	93.6	45.4	4.7:1	6.4
Four-Yr. Undergrad.	38.2	9.2:1	69.5	45.4	9.2:1	30.5
Graduate students	15.2	17.3:1	66.1	18.5	12.8:1	33.9
Professional stud.	19.4	19.6:1	44.0	8.8	19.9:1	56.0
Northeast						
Two-Yr. Undergrad.	41.2	7.1:1	86.9	27.3	7.5:1	13.1
Four-Yr. Undergrad.	24.8	11.3:1	50.8	6.3	16.9:1	49.2
Graduate students	3.0	21.1:1	35.5	4.8	19.5:1	64.5
Professional stud.	3.4	14.6:1	24.6	3.2	24.3:1	75.4
Midwest						
Two-Yr. Undergrad.	49.3	6.4:1	94.0	53.4	3.7:1	6.0
Four-Yr. Undergrad.	12.9	14.2:1	71.8	21.8	12.0:1	28.2
Graduate students	4.8	18.1:1	78.0	6.8	11.1:1	22.0
Professional stud.	4.2	21.3:1	47.8	3.6	28.0:1	52.2
South						
Two-Yr. Undergrad.	18.2	3.7:1	93.0	50.0	2.9:1	7.0
Four-Yr. Undergrad.	53.7	5.1:1	76.0	79.4	3.8:1	24.0
Graduate students	28.3	11.7:1	74.6	40.6	6.6:1	25.4
Professional stud.	17.0	20.0:1	55.4	55.8	10.0:1	44.6
West						
Two-Yr. Undergrad.	29.4	8.7:1	98.3	60.0	24.6:1	1.7
Four-Yr. Undergrad.	10.8	22.2:1	80.2	8.4	20.2:1	19.8
Graduate students	4.0	31.4:1	74.3	2.4	18.1:1	25.7
Professional stud.	7.2	21.0:1	43.1	7.7	37.5:1	56.9

Table 5

Segregation Indices for State Higher Education Enrollments, by Level, 1976

Northeast					Midwest					South					West				
State	2-Yr	4-Yr	Grad	Prof	State	2-Yr	4-Yr	Grad	Prof	State	2-Yr	4-Yr	Grad	Prof	State	2-Yr	4-Yr	Grad	Prof
CT	19.6	0.8	0.3	2.6	IL	65.2	17.0	9.6	4.1	AL	33.0	65.6	26.9	40.9	AK	0.0	5.9	1.5	--
ME	0.4	1.2	0.0	0.0	IN	7.4	4.2	0.3	5.2	AR	28.8	39.4	7.3	1.6	AZ	4.1	0.1	0.5	0.6
MA	26.3	4.6	0.4	3.7	IA	0.6	2.8	2.2	4.8	DC	0.0	77.4	60.8	51.1	CA	30.1	9.6	2.0	5.4
NH	0.0	8.7	1.2	0.0	KS	11.8	2.6	0.8	2.0	DE	9.6	44.8	0.0	--	CO	21.3	5.8	0.8	5.3
NJ	38.8	4.2	0.6	5.2	MI	53.1	18.6	3.8	3.0	FL	7.2	47.2	9.3	2.6	HI	1.2	0.0	0.2	0.0
NY	41.2	21.4	6.0	3.2	MN	0.2	0.8	0.1	4.1	GA	22.7	63.4	43.4	59.2	ID	0.2	1.0	1.0	0.0
PA	38.4	21.4	0.2	2.4	MO	32.8	15.3	0.2	2.6	KY	0.4	21.0	2.5	0.0	MT	0.8	5.6	0.2	0.0
RI	0.0	3.1	1.0	0.0	NE	9.7	3.2	1.4	1.0	LA	31.4	56.6	40.6	40.6	NV	6.6	3.0	0.1	--
VT	1.9	5.0	4.0	0.0	ND	0.6	0.4	0.2	0.2	MD	46.2	51.7	27.8	1.4	NM	6.6	3.0	9.4	0.0
					OH	36.6	15.8	5.2	5.7	MS	37.6	69.6	63.4	0.3	OR	0.7	4.9	0.4	0.1
					SD	0.2	3.9	0.6	0.0	NC	14.2	74.0	32.3	17.2	VT	0.1	1.3	0.8	0.9
					WI	16.2	1.2	0.0	0.6	OK	6.2	24.5	0.8	0.0	WA	13.7	3.5	0.-	5.8
										SC	14.9	62.5	45.4	1.2	WY	0.8	0.0	0.0	0.0
										TN	39.0	49.4	26.9	70.4					
										TX	9.1	51.3	32.7	34.6					
										VA	20.8	74.4	34.2	1.6					
										WV	4.9	7.8	0.2	0.0					

Table 6

Segregation Indices Standardized for Region and State, By Level, 1976

	Two-Year Undergrads.	Four-Year Undergrads.	Graduate Students	Professional Students
Nation	33.0	40.4	17.2	19.4
Nation standardized for Region	33.6	28.8	12.9	14.9
Nation standardized for State	26.9	24.0	10.0	10.5
Northeast	39.9	17.4	4.6	4.2
Northeast standardized for state	35.8	14.0	2.7	3.1
Difference	4.1	3.4	1.9	1.1
Midwest	50.0	15.5	5.9	3.4
Midwest dtandardized for State	36.4	10.6	3.6	3.7
Difference	13.6	. 4.9	2.3	-.3
South	20.8	59.4	33.1	40.2
South standardized for State	18.1	53.4	29.4	27.2
Difference	2.7	6.0	3.7	13.0
West	30.1	10.6	5.4	7.2
West standardized for state	22.5	6.1	1.6	4.3
Differences	7.6	4.5	3.8	2.9

Table 7

Segregation Indices and Black Enrollment for Subsets of Southern Institutions of Higher Education, By Level, 1976

Level		All Southern Institutions	All-Private TBI	All-Public TBI	All-Private/Public TBI
Two-Yr. Undergrad.	Seg. Index	20.8	15.2	19.2	15.?
	Black Enroll.	89,343	87,092	84,011	81,7
	% Black Loss		2.5	6.0	8.4
Four-Yr. Undergrad.	Seg. Index	59.4	50.2	39.6	9.6
	Black Enroll.	220,388	171,694	132,687	83,993
	% Black Loss		22.1	39.8	61.9
Graduate Students	Seg. Index	33.1	23.6	20.4	5.1
	Black Enroll.	9,322	7,894	7,389	5,961
	% Black Loss		15.3	20.7	36.0
Professional Students	Seg. Index	40.2	12.3	37.1	2.2
	Black Enroll.	4,108	2,437	3,747	2,076
	% Black Loss		40.7	8.8	49.5

References

Astin, Alexander W.
1977 "Equal access to postsecondary education: Myth or reality?" The UCLA Educator 19 (Spring): 8-17.

Becker, Henry Jay, James M. McPartland, and Gail E. Thomas
1978 "The measurement of segregation: The Dissimilarity Index and Coleman's Segregation Index compared." Social Statistics Section, Annual meetings of the American Statistical Association.

Blake, Elias, Jr., Linda J. Lambert, and Joseph L. Martin
1974 Degrees Granted and Enrollment Trends in Historically Black Colleges: An Eight-Year Study. Washington, D.C.: Institute for Services to Education

Brown, Frank, and Madelon D. Stent
1977 Minorities in U.S. Institutions of Higher Education. New York: Praeger.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James M. McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York
1966 Equality of Educational Opportunity. Washington, D.C.: U.S. Government Printing Office

Coleman, James S., Sara D. Kelly, and John A. Moore
1975 Trends in School Segregation, 1968-73. Washington, D.C.: Urban Institute.

Cortese, Charles F., R. Frank Falk, and Jack Cohen
1976 "Further considerations on the methodological analysis of segregation indices." American Sociological Review 41: 630-37.

Farley, Reynolds, and Alma F. Taeuber
1974 "Racial segregation in the public schools." American Journal of Sociology 79: 888-904.

Farley, Reynolds
1975a "Residential segregation and its implications for school integration." Law and Contemporary Problems 39: 164-193.

Farley, Reynolds
1975b "Racial integration in the public schools, 1967 to 1972: Assessing the effect of governmental policies." Sociological Focus 8: 3-26.

Haynes, Leonard, III
1978 The Adams Cases: A Critical Sourcebook. Washington, D.C.: Institute for Services to Education.

Institute for the Study of Educational Policy
1976 Equal Educational Opportunity for Blacks in U.S. Higher Education: An Assessment. Washington, D.C.: Howard University Press.

Lloyd, Crystal C.
1978 Adams v. Califano: A Case Study in the Politics of Regulation. Washington, D.C.: Sloan Commission on Government and Higher Education.

National Advisory Committee on Black Higher Education and Black College and Universities
1978 Higher Education Equity: The Crisis of Appearance Versus Reality. Washington, D.C.: National Advisory Committee on Black Higher Education and Black Colleges and Universities.

Peng, Samuel S., J. P. Barley, Jr., and Bruce K. Eckland
1977 "Access to higher education: Results from the National Longitudinal Study of the High School Class of 1972." Educational Researcher 6 (December); 3-7.

Turner, William H. and John A. Michael
1978 A Definitive List of Traditionally Black Institutions. Unpublished manuscript.

U.S. Bureau of the Census
1977 Statistical Abstract of the United States: 1977. (98th edition.) Washington, D.C.: U.S. Government Printing Office

U.S. Department of Health, Education, and Welfare, Office for Civil Rights
1974 Racial and Ethnic Enrollment Data From Institutions of Higher Education, Fall 1972. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health, Education, and Welfare, Office for Civil Rights
1976 Racial and Ethnic Enrollment Data From Institutions of Higher Education. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health, Education, and Welfare
1976 The Condition of Education, 1976 Edition. Washington, D.C.: U.S. Government Printing Office.